Name

Derivative Rules - Multi Chain Quotient Trigonometric to Derivative

1 Find the derivative f'(x) using the quotient, chain, and trigonometric rules. $f(x) = \frac{\sqrt[3]{(x^2-2)}}{3\sin(x)}$

A $f'(x) = \frac{\frac{1}{3}(x^2-2)^{-\frac{2}{3}}(2x)(3\sin(x)) + \sqrt[3]{(x^2-2)}(3\cos(x))}{(3\sin(x))^2}$

B $f'(x) = \frac{\frac{1}{3}(x^2-2)^{-\frac{2}{3}}(2x)(3\sin(x)) - \sqrt[3]{(x^2-2)}(3\cos(x))}{3\sin(x)}$

C $f'(x) = \frac{\sqrt[3]{(x^2-2)}(3\cos(x)) - \frac{1}{3}(x^2-2)^{-\frac{2}{3}}(2x)(3\sin(x))}{(3\sin(x))^2}$

D $f'(x) = \frac{\frac{1}{3}(x^2-2)^{-\frac{2}{3}}(2x)(3\sin(x)) - \sqrt[3]{(x^2-2)}(3\cos(x))}{(3\sin(x))^2}$

2 Find the derivative f'(x) using the quotient, chain, and trigonometric rules. $f(x) = \frac{(2x^2-3)^{\frac{1}{2}}}{2\cos(x)}$

A $f'(x) = \frac{(2x^2-3)^{\frac{1}{2}}(-2\sin(x)) - \frac{1}{2}(2x^2-3)^{-\frac{1}{2}}(4x)(2\cos(x))}{(2\cos(x))^2}$

B $f'(x) = \frac{\frac{1}{2}(2x^2-3)^{-\frac{1}{2}}(4x)(2\cos(x)) - (2x^2-3)^{\frac{1}{2}}(-2\sin(x))}{(2\cos(x))^2}$

C $f'(x) = \frac{\frac{1}{2}(2x^2-3)^{-\frac{1}{2}}(4x)(2\cos(x)) + (2x^2-3)^{\frac{1}{2}}(-2\sin(x))}{(2\cos(x))^2}$

D $f'(x) = \frac{\frac{1}{2}(2x^2-3)^{-\frac{1}{2}}(4x)(2\cos(x)) - (2x^2-3)^{\frac{1}{2}}(-2\sin(x))}{2\cos(x)}$

3 Find the derivative f'(x) using the quotient, chain, and trigonometric rules. $f(x) = \frac{(3x+2)^3}{2\cos(x)}$

A $f'(x) = \frac{9(3x+2)^2(2\cos(x)) - (3x+2)^3(-2\sin(x))}{(2\cos(x))^2}$

B $f'(x) = \frac{(3x+2)^3(-2\sin(x)) - 9(3x+2)^2(2\cos(x))}{(2\cos(x))^2}$

C $f'(x) = \frac{9(3x+2)^2(2\cos(x)) - (3x+2)^3(-2\sin(x))}{2\cos(x)}$

D $f'(x) = \frac{9(3x+2)^2(2\cos(x)) + (3x+2)^3(-2\sin(x))}{(2\cos(x))^2}$

4 Find the derivative f'(x) using the quotient, chain, and trigonometric rules. $f(x) = \frac{\frac{1}{(x+2)^2}}{4\sin(x)}$

A $f'(x) = \frac{-2(x+2)^{-3}(4\sin(x)) - \frac{1}{(x+2)^2}(4\cos(x))}{(4\sin(x))^2}$

B $f'(x) = \frac{-2(x+2)^{-3}(4\sin(x)) - \frac{1}{(x+2)^2}(4\cos(x))}{4\sin(x)}$

C $f'(x) = \frac{\frac{1}{(x+2)^2}(4\cos(x)) - -2(x+2)^{-3}(4\sin(x))}{(4\sin(x))^2}$

D $f'(x) = \frac{-2(x+2)^{-3}(4\sin(x)) + \frac{1}{(x+2)^2}(4\cos(x))}{(4\sin(x))^2}$

5 Find the derivative f'(x) using the quotient, chain, and trigonometric rules. $f(x) = \frac{(x^2-2)^{-2}}{\cos(x)}$

A $f'(x) = \frac{(x^2-2)^{-2}(-\sin(x)) - -2(x^2-2)^{-3}(2x)(\cos(x))}{(\cos(x))^2}$

B $f'(x) = \frac{-2(x^2-2)^{-3}(2x)(\cos(x)) - (x^2-2)^{-2}(-\sin(x))}{\cos(x)}$

C $f'(x) = \frac{-2(x^2-2)^{-3}(2x)(\cos(x)) + (x^2-2)^{-2}(-\sin(x))}{(\cos(x))^2}$

D $f'(x) = \frac{-2(x^2-2)^{-3}(2x)(\cos(x)) - (x^2-2)^{-2}(-\sin(x))}{(\cos(x))^2}$

6 Find the derivative f'(x) using the quotient, chain, and trigonometric rules. $f(x) = \frac{(x+3)^2}{5\sin(x)}$

A $f'(x) = \frac{2(x+3)(5\sin(x)) - (x+3)^2(5\cos(x))}{5\sin(x)}$

B $f'(x) = \frac{(x+3)^2(5\cos(x)) - 2(x+3)(5\sin(x))}{(5\sin(x))^2}$

C $f'(x) = \frac{2(x+3)(5\sin(x)) - (x+3)^2(5\cos(x))}{(5\sin(x))^2}$

D $f'(x) = \frac{2(x+3)(5\sin(x)) + (x+3)^2(5\cos(x))}{(5\sin(x))^2}$

7 Find the derivative f'(x) using the quotient, chain, and trigonometric rules. $f(x) = \frac{\sqrt[3]{(2x+5)}}{3\cos(x)}$

A $f'(x) = \frac{\frac{2}{3}(2x+5)^{-\frac{2}{3}}(3\cos(x)) - \sqrt[3]{(2x+5)}(-3\sin(x))}{(3\cos(x))^2}$

B $f'(x) = \frac{\frac{2}{3}(2x+5)^{-\frac{2}{3}}(3\cos(x)) - \sqrt[3]{(2x+5)}(-3\sin(x))}{3\cos(x)}$

C $f'(x) = \frac{\frac{2}{3}(2x+5)^{-\frac{2}{3}}(3\cos(x)) + \sqrt[3]{(2x+5)}(-3\sin(x))}{(3\cos(x))^2}$

D $f'(x) = \frac{\sqrt[3]{(2x+5)}(-3\sin(x)) - \frac{2}{3}(2x+5)^{-\frac{2}{3}}(3\cos(x))}{(3\cos(x))^2}$

8 Find the derivative f'(x) using the quotient, chain, and trigonometric rules. $f(x) = \frac{(3x-3)^3}{5\cos(x)}$

A $f'(x) = \frac{9(3x-3)^2(5\cos(x)) + (3x-3)^3(-5\sin(x))}{(5\cos(x))^2}$

B $f'(x) = \frac{9(3x-3)^2(5\cos(x)) - (3x-3)^3(-5\sin(x))}{(5\cos(x))^2}$

C $f'(x) = \frac{9(3x-3)^2(5\cos(x)) - (3x-3)^3(-5\sin(x))}{5\cos(x)}$

D $f'(x) = \frac{(3x-3)^3(-5\sin(x)) - 9(3x-3)^2(5\cos(x))}{(5\cos(x))^2}$